

Notice of Allowability	Application No.	Applicant(s)	
	10/003,189	ENNIS ET AL.	
	Examiner Michael Y. Won	Art Unit 2155	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTO-85) or other appropriate communication will be mailed in due course. THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS. This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. This communication is responsive to the Amendment filed February 6, 2007 and RCE filed March 6, 2007.
2. The allowed claim(s) is/are 1,3,4,6-12,14,15,17-23,25,26 and 28-33 (renumbered 1-27).
3. Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All
 - b) Some*
 - c) None
 - of the:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) hereto or 2) to Paper No./Mail Date _____.
 - (b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>Attached</u>. 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____. |
|---|--|

DETAILED ACTION

1. This action is in response to the amendment filed February 6, 2007 and the Request for Continued Examination filed March 6, 2007.
 2. Claims 1, 12, and 23 have been amended and claims 2, 13, and 24 have been previously cancelled.
 3. Claims 1, 2-12, 14-23, and 25-33 have been examined and are pending with this action.
- EXAMINER'S AMENDMENT**
4. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
 5. Authorization for this examiner's amendment was given in a telephone interview with Bradley D. Crose (Reg. No. 56,766) on March 19, 2007.
 6. The application has been amended as follows:

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1. **(Currently Amended)** A method, implemented by a communication coordinator on a module, for carrying out reliable communication in a communication system, comprising:

receiving a message from a sender intended for one or more applications, said message comprising a message identifier, and wherein said message identifier comprises a message sequence indicator;

determining, at the communication coordinator on the module that received the message, based upon said message identifier whether said message had previously been received, wherein determining whether said message had previously been received comprises:

accessing a receiving sequence indicator associated with said sender;
determining whether said message sequence indicator precedes said receiving sequence indicator in a predetermined sequence;

in response to a determination that said message sequence indicator precedes said receiving sequence indicator in said predetermined sequence,
determining whether said message sequence indicator is one of the sequence indicators in a set of missing sequence indicators maintained in a table; and in response to a determination that said message sequence indicator is not one of the sequence indicators in said set of missing sequence indicators, concluding that said message had previously been received; and
in response to a determination that said message had previously been received, foregoing delivery of said message to said one or more applications;

wherein a message exchange between a sender and a receiver is conducted ensuring that a message is delivered to a recipient said one or more applications at most once; and

wherein a subscriber is enabled to subscribe to multiple events using a single namespace specification and a single subscription request;

5. (Currently Cancelled)

8. (Currently Amended) The method of claim 7, wherein said message identifier comprises a message sequence indicator, and wherein determining whether said message had previously been received comprises:

accessing a receiving sequence indicator associated with said sender;
determining whether said message sequence indicator precedes said receiving sequence indicator in a predetermined sequence;

in response to a determination that said message sequence indicator precedes said receiving sequence indicator in said predetermined sequence, determining whether said message sequence indicator is one of the sequence indicators in a set of missing sequence indicators;

in response to a determination that said message sequence indicator is one of the sequence indicators in said set of missing sequence indicators, concluding that said message had not previously been received; and further comprising:

removing said message sequence indicator from said set of missing sequence indicators.

12. (Currently Amended) An apparatus for implementing reliable communication in a communication system, comprising:

a mechanism for receiving a message from a sender intended for one or more applications, said message comprising a message identifier, wherein said message identifier comprises a message sequence indicator;

a mechanism for determining, at a communication coordinator on a module that received the message, based upon said message identifier whether said message had previously been received, and wherein said mechanism for determining whether said message had previously been received comprises:

a mechanism for accessing a receiving sequence indicator associated with said sender;

a mechanism for determining whether said message sequence indicator precedes said receiving sequence indicator in a predetermined sequence;

a mechanism for determining, in response to a determination that said message sequence indicator precedes said receiving sequence indicator in said predetermined sequence, whether said message sequence indicator is one of the sequence indicators in a set of missing sequence indicators maintained in a table; and a mechanism for concluding, in response to a determination that said message sequence indicator is not one of the sequence indicators in said set of

missing sequence indicators, that said message had previously been received;
and

a mechanism for foregoing, in response to a determination that said message
had previously been received, delivery of said message to said one or more
applications;

wherein a message exchange between a sender and a receiver is conducted
ensuring that a message is delivered to a recipient said one or more applications at
most once; and

wherein a subscriber is enabled to subscribe to multiple events using a single
namespace specification and a single subscription request.

16. (Currently Cancelled)

19. (Currently Amended) The apparatus of claim 18, wherein said message
identifier comprises a message sequence indicator, and wherein said mechanism for
determining whether said message had previously been received comprises:

~~a mechanism for accessing a receiving sequence indicator associated with said
sender;~~

~~a mechanism for determining whether said message sequence indicator
precedes said receiving sequence indicator in a predetermined sequence;~~

~~a mechanism for determining, in response to a determination that said message
sequence indicator precedes said receiving sequence indicator in said predetermined~~

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~~sequence, whether said message sequence indicator is one of the sequence indicators in a set of missing sequence indicators;~~

~~a mechanism for concluding, in response to a determination that said message sequence indicator is one of the sequence indicators in said set of missing sequence indicators, that said message had not previously been received; and further comprising:~~

~~a mechanism for removing said message sequence indicator from said set of missing sequence indicators.~~

23. (Currently Amended) A computer readable medium comprising instructions which, when executed by one or more processors, cause the one or more processors to implement reliable communication in a communication system, said computer readable medium comprising:

instructions for causing one or more processors to receive a message from a sender intended for one or more applications, said message comprising a message identifier, wherein said message identifier comprises a message sequence indicator;

instructions for causing one or more processors to determine, at a communication coordinator on a module that received the message, based upon said message identifier whether said message had previously been received, and wherein the instructions for causing one or more processors to determine whether said message had previously been received comprises:

instructions for causing one or more processors to access a receiving sequence indicator associated with said sender;

instructions for causing one or more processors to determine whether said message sequence indicator precedes said receiving sequence indicator in a predetermined sequence;

instructions for causing one or more processors to determine, in response to a determination that said message sequence indicator precedes said receiving sequence indicator in said predetermined sequence, whether said message sequence indicator is one of the sequence indicators in a set of missing sequence indicators maintained in a table; and instructions for causing one or more processors to conclude, in response to a determination that said message sequence indicator is not one of the sequence indicators in said set of missing sequence indicators, that said message had previously been received; and instructions for causing one or more processors to forego, in response to a determination that said message had previously been received, delivery of said message to said one or more applications;

wherein a message exchange between a sender and a receiver is conducted ensuring that a message is delivered to a recipient said one or more applications at most once; and

wherein a subscriber is enabled to subscribe to multiple events using a single namespace specification and a single subscription request.

27. (Currently Cancelled)

30. (Currently Amended) The computer readable medium of claim 29, wherein said message identifier comprises a message sequence indicator, and wherein the instructions for causing one or more processors to determine whether said message had previously been received comprises:

~~instructions for causing one or more processors to access a receiving sequence indicator associated with said sender;~~

~~instructions for causing one or more processors to determine whether said message sequence indicator precedes said receiving sequence indicator in a predetermined sequence;~~

~~instructions for causing one or more processors to determine whether said message sequence indicator is one of the sequence indicators in a set of missing sequence indicators;~~

~~instructions for causing one or more processors to conclude, in response to a determination that said message sequence indicator is one of the sequence indicators in said set of missing sequence indicators, that said message had not previously been received; and further comprising:~~

instructions for causing one or more processors to remove said message sequence indicator from said set of missing sequence indicators.

Allowable Subject Matter

7. Claims 1, 3, 4, 6-12, 14, 15, 17-23, 25, 26, and 28-33 are allowable over prior art of record and in light of applicants' arguments filed February 6, 2007 and the Examiner's Amendment above.
8. The following is an examiner's statement of reasons for allowance:

The prior art of record does not disclose, teach, or suggest neither singly nor in combination the claimed limitation of "accessing a receiving sequence indicator associated with said sender; determining whether said message sequence indicator precedes said receiving sequence indicator in a predetermined sequence; in response to a determination that said message sequence indicator precedes said receiving sequence indicator in said predetermined sequence, determining whether said message sequence indicator is one of the sequence indicators in a set of missing sequence indicators maintained in a table; and in response to a determination that said message sequence indicator is not one of the sequence indicators in said set of missing sequence indicators, concluding that said message had previously been received" as recited in claim 1 and similarly cited in claims 12 and 23.
9. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Y. Won whose telephone number is 571-272-3993. The examiner can normally be reached on M-Th: 7AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on 571-272-4006. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael Won



March 21, 2007